Maesopsis eminii - 48

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Maesopsis eminii Engl.

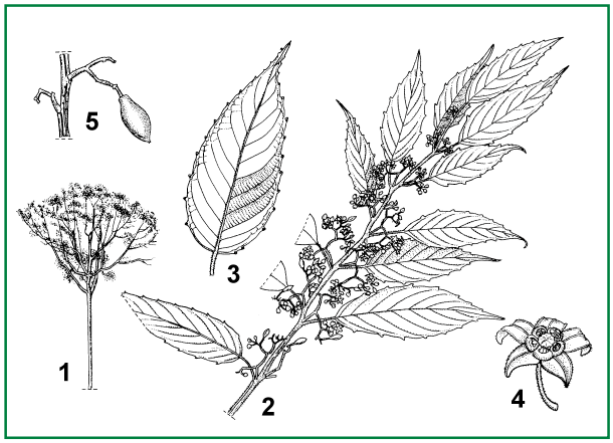
Taxonomy and nomenclature

Family: Rhamnaceae
Synonyms: *Maesopsis berchemoides* (Pierre) Engl.
Vernacular/common names: umbrella tree, musizi.
Two subspecies are recognised, eminii and berchemoides (Pierre) N. Halle

Distribution and habitat

Natural occurrence in a band across Africa from Kenya to Liberia between 8°N and 6°S where it is mainly found on the fringes of high forests in the ecozone between rainforest and savannah. It is an early successional species, adept at colonising disturbed areas in forests.

Introduced to Southeast Asia and Central America. Within the area of natural distribution it is found in the lowlands and extending into submontane forest up to 1800 m altitude. In plantations it is normally planted in the lowland and grows best at altitudes from 600 to 900 m. Prefers mean annual rainfall of 1200-3600 mm and tolerates a dry season of up to 4 months. Prefers deep, well-drained soils but can grow on light soils if there is sufficient water.



1, Habit; 2, flowering branch; 3, lower side of leaf; 4, flower; 5, branchlet with fruit. From Plant Resources of South-East Asia No. 11.

Uses

A fast growing multipurpose tree with moderately strong and durable timber used for indoor construction, boxes, poles a.o. Widely planted for fuelwood.

The leaves are used for fodder. They have a dry matter content of 35% and digestibility by livestock is excellent. The pulpwood is comparable with other hardwoods used for pulp production. It is used in agroforestry as a shade tree for cocoa, coffee, cardamom and tea and planted for erosion control. Although an aggressive coloniser of grasslands and disturbed areas within forests, it does not grow well in competition with tall Imperata and Pennisetum grasses.

Botanical description

Semi-deciduous tree, up to 45 m tall with clear bole to about 2/3 of the height. Bark normally pale grey, deeply fissured, inner bark deep red. Leaves simple, alternate or sub-opposite, 6-15 cm long with serrate margins. Inflorescence a many-flowered, axillary cyme, 1-5 cm long. Flowers small, bisexual, with 5 yellow-white petals.

Fruit and seed description

The fruit is an obovoid drupe, 20-35 mm long, green at first later turning yellow and finally purple or black at maturity. Under the exocarp is the spongy mesocarp and innermost the stony endocarp surrounding the seed. Each fruit contains 1 (-2) seeds with dark seedcoat.

There are 700-1000 pyrenes (seed + endocarp) per kg.

Flowering and fruiting habit

Flowering and fruiting begin when the trees are 4-5 years old. A crop is produced every year and seed production is normally plentiful.

In Uganda fruiting occurs in April-August, in Tanzania in June-November with a peak in July-August. Planted trees in Malaysia flower twice a year, February-May and August-September.

Seeds mature about two months after flowering. The fruits are dispersed by birds, bats, monkeys and rodents.

Harvest

Ripe fruits are collected form the ground soon after natural shedding. Small or green fruits should be avoided. At the time of harvest the fruits have very high moisture content and transport and temporary storage should be kept at a minimum.

Processing and handling

As soon as possible after collection the fleshy exocarp is removed. For small quantities the pulp is removed using a knife or by rubbing the fruits over a wire mesh. For large quantities the fruits are soaked in water for 24 hours, then mixed with gravel in the proportion 1 kg of gravel to 2 kg of fruits and depulped in a cement mixer with large quantities of water for about 30 minutes. The clean pyrenes are dried on a wire mesh in the sun for several days during which they are frequently stirred and kept well aerated.

5 kg fruits yield about 1 kg of extracted pyrenes.

Storage and viability

There are conflicting reports on the storage behaviour of this species. Germination is normally very high for freshly collected seeds but after a few months' storage it is low and erratic. It is likely that this is caused by dormancy not because the seeds are recalcitrant. Kenya Forest Seed Centre and others recommend storage at 4-9% moisture content. When stored at this mc and at 3°C the seed can retain viability for up to 3 years.

Dormancy and pretreatment

The most common pretreatment is to soak the pyrenes in cold water for 3 days, changing the water every day. Some recommend scarification while other trials show this treatment has no effect.

Sowing and germination

The unit for sowing is the pyrene. Germination is slow even after pretreatment and may last up to 4 months. The final germination will typically reach 65-80%.

Because of the strong development of the taproot it is normally recommended to sow directly in polybags. Some, however, prefer broadcast sowing in seedbeds because of the slow and erratic germination. If sown in seedbeds, the seedlings should be pricked out in the cotyledonous state before the roots develop.

After 2-4 months the seedlings are ready for transplanting into the field.

Stands can also be established by natural regeneration, direct sowing or planting stock raised from stump plants.

Phytosanitary problems

Lepidopteran larvae can attack seeds prior to collection.

Selected readings

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Tree habit. Photo: K.M. Kochummen

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